

SECTION II—REMARKS

Applicants thank the Examiner for a thorough review, and respectfully request reconsideration of the above referenced patent application for the following reasons:

Petition for Revival attached concurrently herewith

Applicants respectfully submit concurrently herewith a *Petition for Revival of an Application for Patent* abandoned unintentionally under 37 C.F.R. § 1.137(b). Applicants respectfully request the PTO grant the petition and allow prosecution of the above referenced application to proceed on its merits.

Claims 1-22 rejected under 35 U.S.C. § 101

The PTO rejected claims 1-22 under 35 U.S.C. § 101 asserting that “the claimed invention is directed to non-statutory subject matter.” In particular, the PTO states that claims 1-22 reciting limitations controlled by “if conditions … are just an abstract idea … [and] do not provide practical application that produces a useful, tangible and concrete result.”

Applicants respectfully submit that claims 1-22 as amended herein are in condition for allowance under 35 U.S.C. § 101 as the claims, presented in their current form, do not recite “if conditions” as rejected in original claims 1-22. Applicants further submit that claims 23-46 as amended herein likewise do not recite “if conditions,” as presented in their current form.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to amended claims 1-22 under 35 U.S.C. § 101.

Claims 23-46 objected to due to informalities

The PTO objected to claims 23 and 35 stating that lines 7 and 13 respectively should read “allocate a register” rather than “allocate register.”

Applicants respectfully submit that claims 23 and 35 have been amended herein and no longer recite the phrase “allocate register,” as objected to by the PTO. Applicants were careful to not introduce similar errors claims 1-46 as amended herein.

Accordingly, Applicants respectfully request the PTO withdraw its objection to claims 23-46 as amended herein, in particular claims 23 and 35 as these claims no longer recite the erroneous language objected to by the PTO.

Claims 1-46 rejected under 35 U.S.C. § 112, second paragraph

The PTO rejected claims 1-46 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claims 1, 12, 23, and 35 have unclear references to ‘the operand’

With reference to claims 1, 12, 23, and 35 in particular, the PTO asserts that “it is not clear which operand ‘the operand’ is referr[ing] to since at least two operands were mentioned.”

Applicants respectfully submit that claims 1, 12, 23, and 35 as amended herein are in condition for allowance under 35 U.S.C. § 112, second paragraph, as the claims, presented in their current form, refer unambiguously to “the operand.” In particular, independent claim 1 as amended herein recites in pertinent part:

A method for processing a group of instructions ...
selecting an instruction to schedule, the instruction **associated**

with an operand, wherein **the operand** comprises ... attempting to allocate a preserved register **to the operand**

As can be seen from this passage, although “operand” is mentioned on multiple occasions, it is unambiguous which operand the phrase “the operand” is referring to.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to claims 1, 12, 23, and 35 as amended herein under 35 U.S.C. § 112, second paragraph.

Claims 1, 12, 23, and 35 are unclear as to why registers are repeatedly allocated

With reference to claims 1, 12, 23, and 35 again, the PTO asserts that:

[A] preserved register and a scratch register are allocated respectively. However, a register has already been allocated ... [i]t is not clear why the registers are repeatedly allocated.

Applicants respectfully submit that claims 1, 12, 23, and 35 as amended herein are in condition for allowance under 35 U.S.C. § 112, second paragraph.

In accordance with accepted patent practice, Applicants do not recite the benefits of a claimed method or apparatus, nor do Applicants recite in the claim “why the registers are repeatedly allocated.” See *Poly-America LP v. GSE Lining Tech. Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004) stating that “language merely extolling benefits or features of the claimed invention does not limit the claim scope.”

Applicants then, in response to the PTO’s assertion that “[i]t is not clear why are the registers are repeatedly allocated,” respectfully refer the PTO to the original application as submitted, with specific reference to the “background” section which describes in detail the problems with the prior art that may be solved through practice of the claimed invention.

Because it is not necessary for Applicants to recite “why the registers are repeatedly allocated,” within the claims, and because the new claims recite novel limitations over the prior art of record, Applicants respectfully submit that claims 1, 12, 23, and 35 as amended herein are in condition for allowance in their present form.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to claims 1, 12, 23, and 35 as amended herein under 35 U.S.C. § 112, second paragraph.

Claims 1, 12, 23, and 35 unclear meaning of ‘treating the live range as tentative’

Again with reference to claims 1, 12, 23, and 35, the PTO asserts that:

[I]t is not clear what is meant by ‘treating the live range as tentative’ since the values used in a computer system are all tentative. Something [is] missing in the claim language.

Applicants respectfully submit that claims 1, 12, 23, and 35 as amended herein are in condition for allowance under 35 U.S.C. § 112, second paragraph, as the claims, presented in their current form, no longer recite “tentative live range.”

Applicants respectfully bring to the attention of the PTO however, that dependent claims 4-10, 15-21, 26-32, 34, 38-44, and 46 do recite “tentative live range.” In particular, dependent claim 7 as amended herein recites in pertinent part:

marking the live range of the operand as **a tentative live range** when current information about the live range is insufficient to determine whether or not the live range spans the function call . . .

Applicants recite similar limitations in other dependent claims as amended herein.

Support for this limitation is found in the specification as originally submitted at page 7, line 20 to page 8, line 7. This reference teaches in pertinent part:

[T]he operand is examined to determine if its live range will span a function call. At that time the register allocator may know that the operand's live range will span a call, or will not span a call, **or the register allocator may not be able to determine this.** It is contemplated that the majority of operands may be classified as "unknown" or "tentative" when first encountered. As will be described in detail below, **if an operand is classified as "tentative", both a scratch and preserved register may be reserved for the operand, and the unnecessary register may be released when more information is available.**

Because the claimed limitation is adequately supported by the specification as originally submitted, Applicants respectfully request the PTO withdraw its rejection to independent claims 1, 12, 23, and 35 as amended herein under 35 U.S.C. § 112, second paragraph. Furthermore, Applicants respectfully request the PTO allow dependent claims 4-10, 15-21, 26-32, 34, 38-44, and 46 as amended herein, despite their recitation "tentative live range" finds support in the specification.

Claims 1 and 12 unclear effect if 'allocation [is] not successful'

With reference to claims 1 and 12 in particular, the PTO asserts that "it is not clear what will happen if the allocation [is] not successful."

Applicants respectfully submit that claims 1 and 12 as amended herein are in condition for allowance under 35 U.S.C. § 112, second paragraph. In particular, Applicants respectfully submit that it is unnecessary to recite in a claim every permutation and combination of events or limitations that could or may occur. Stated differently, Applicants are not required to recite "what will happen if the allocation [is] not successful." Instead, Applicants recite novel limitations in the claims over the prior art of record, thus putting the claims in condition for allowance.

Accordingly, Applicants respectfully request the PTO allow claims 1 and 12 as amended herein under 35 U.S.C. § 112, second paragraph.

Claim 23 lacks proper antecedent basis

With reference to claim 23, the PTO asserts that the phrase “the register allocation” lacks proper antecedent basis.

Applicants respectfully submit that claim 23 as amended herein is in condition for allowance under 35 U.S.C. § 112, second paragraph. In particular, Applicants have removed the claim language rejected to by the PTO and were furthermore, careful not to repeat similar erroneous references lacking a proper antecedent basis.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to claim 23 as amended herein under 35 U.S.C. § 112, second paragraph.

Claims 1-46 generally require review and correction

Lastly, with reference to all claims generally, the PTO mandates that “Applicant[s] ... review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.”

Applicants acknowledge the PTO’s request to review and revise where necessary all claims in accordance with 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that claims 1-46 as amended herein are in a form that complies with 35 U.S.C. § 112, second paragraph and thus, claims 1-46 as amended herein are in condition for allowance.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to amended claims 1-46 under 35 U.S.C. § 112, second paragraph.

Claims 1-3, 7, 11-14, 18, 22-23, 34-37, 41, 45, and 46 rejected under 35 U.S.C. § 102(e)

The PTO rejected claims 1-3, 7, 11-14, 18, 22-23, 34-37, 41, 45, and 46 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,651,247 to Srinivasan (“Srinivasan”).

Applicants respectfully submit that claims 1-3, 7, 11-14, 18, 22-23, 34-37, 41, 45, and 46 as amended herein are in condition for allowance under 35 U.S.C. § 102(e). In particular, independent claim 1 as amended herein recites in pertinent part:

attempting to allocate a preserved register to the operand for its live range **when its live range spans a function call**; attempting to allocate a scratch register to the operand for its live range **when its live range does not span the function call**;

The PTO asserts that Srinivasan discloses determining when the “**live range [] spans a function call**.” Refer to the Office Action at page 6. The PTO relies upon Srinivasan Figure 1, and column 28, lines 1-62 for its assertion. Figure 1 makes no reference whatsoever to “**when [the] live range spans a function call**,” and therefore does not disclose the above limitation. At column 28, lines 1-62, Srinivasan appears to describe the allocation of rotating registers and static registers to live ranges. Srinivasan additionally discusses allocating rotating registers to “variables with live ranges **equal to or less than II**.” However, allocating a register “**when [the] live range spans a function call**” is not anticipated by allocating a register when the “**live range[is] equal to or less than II**,” and therefore, Srinivasan fails to disclose at least this limitation.

Because Srinivasan fails to disclose each and every element in as complete detail as Applicants recite in amended independent claim 1, Applicants respectfully submit that independent claim 1 as amended herein is in condition for allowance. Independent claims 12, 23, and 35 as amended herein contain similar limitations and therefore are also in condition for allowance. Furthermore, dependent claims 3, 7, 11, 13-14, 18, 22, 34-37, 41, and 45-46

necessarily incorporate the limitations of the independent base claims upon which they depend, as well as adding limitations of their own, and therefore are likewise in condition for allowance.

Accordingly, Applicants respectfully request the PTO withdraw its rejection of claims 1-3, 7, 11-14, 18, 22-23, 34-37, 41, 45, and 46 under 35 U.S.C. § 102(e).

CONCLUSION

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked subject matter in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such subject matter may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (503) 439-8778.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

/Gregory D. Caldwell/

Gregory D. Caldwell
Registration No. 39,926
Attorney for Applicants

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Blakely, Sokoloff, Taylor & Zafman LLP
12400 Wilshire Boulevard, Seventh Floor
Los Angeles CA 90025-1030
Phone: (503) 439-8778
Facsimile: (503) 439-6073